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ABSTRACT

This paper discusses the nature of the relationship between grammar and pragmatics--specifically, between the rules of a language and the principles for using language. It argues that knowledge of language itself plays a small, primarily enabling part in people's ability to communicate effectively and that a large share of communicative competence is the ability to infer a speaker's plans, goals, and purposes from his or her utterances and to plan and execute speech in such a way that such inferences are most efficiently made. The paper demonstrates, first abstractly, then with an extended example, the complexity of the choices involved in making a simple hypothetical utterance. Next, it describes how certain kinds of nonlinguistic knowledge must be involved in making these choices. It also characterizes three kinds of linguistic knowledge: (1) knowledge about language proper (grammar), (2) knowledge about the use of particular forms, and (3) knowledge about communicating. Finally, it discusses some of the implications of this characterization. (FL)

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LINGUISTICS AND THE PRAGMATICS OF LANGUAGE USE: WHAT YOU KNOW WHEN YOU KNOW A LANGUAGE . . . AND WHAT ELSE YOU KNOW

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Linguistics and the Pragmatics of Language Use: What You Know When You Know a Language . . . and What Else You Know

My intention in this paper is to discuss the nature of the relationship between grammar and pragmatics--specifically, between the rules of a language and two kinds of principles for using language. I will argue that knowledge of language itself plays a rather small, primarily enabling part in people's ability to communicate effectively; that a large share of communicative competence is the ability (a) to infer a speaker's plans, goals, intentions, and purposes from his utterances and interpret the speaker's utterances in light of these, and (b) to plan and execute speech in such a way that such inferences are most efficiently made.

Knowledge necessary for these tasks, though crucial for communicative competence, is quite distinct, I claim, from knowledge of language. If what a person says makes no sense, there is nothing necessarily wrong with his grammar, provided that his sentences can be parsed. I do not wish to suggest that linguists should confine their study to knowledge of language as I have described it. The study of communication, including the study of linguistic pragmatics of all sorts, is quite properly within the intellectual interest of linguists generally, and linguists' research habits make it quite reasonable to expect substantial contributions from them to this important field of inquiry. But failure on the part of linguists and others to make the distinctions I am drawing is likely to lead only to confusion and pseudo-questions.

It should be noted that the view offered here provides an alternative to descriptions of language use (e.g., van Dijk, 1977) that treat discourse as if it were the product of a self-contained linguistic system of some sort. Such descriptions are incompatible with the view taken here that since discourse is composed of acts, arranged sequentially, and organized both sequentially and hierarchically (according to the actor's goals and intentions), interpretation and construction of discourse is governed by estimates about intentions and beliefs inferable from acts. Knowledge of language use is not a discrete system, I claim, that could be isolated and described with a grammar of any sort, but rather the product of a general pragmatic system whose function is the executive one of integrating knowledge of all sorts in interpreting and planning acts of all sorts.

As has perhaps become clear, I am not using the term pragmatics in the narrow sense (of "aspects of language which involve users") that Morris (1938) defined, so that it covers only the use of indexicals and honorifics, and things of that ilk. Rather, the sense of pragmatics that I have found useful in relating speech forms to their use in intentional acts is broader, and connected more directly with its Greek roots. By pragmatics I mean simply the principles for getting things done, for having an effect on the world, for undertaking action with expectations about the consequences--in short, for doing things. Knowledge of how to use language to communicate feelings, desires, and beliefs is pragmatics in this sense, as is knowledge of how to use language for perlocutionary effects (e.g., insulting or scaring people [cf. Austin, 1962]), but pragmatics in my sense also includes

knowing how to put out a fire, or baby-proof a house, and the principles for doing a lot of other things which may not involve the use of language at all.

I present a view of competence in language use as a function of a relatively circumscribed theory of a language (a grammar) and a relatively global theory of acts (a pragmatics). I take seriously the notion of utterances as speech acts and conclude that the contribution of grammar, or purely linguistic competence, plays a relatively small role in the performance of these acts, that a greater share of the work that must be done must be assigned to a general theory of acts whose primary notions are such things as intentions, beliefs, goals, acts, and purposes. The speech acts that are involved in uttering a sentence include not only the global, intentional ones of, say, uttering, asserting, and referring, which are involved in conscious communication, but also the acts involved in choosing words and constructions, prosodics, etc., which communicate different kinds of information, less consciously and probably by different means. In other words, a theory of acts is required, to explain how speakers use their knowledge about language in order to construct sentences which will accomplish their objectives in speaking in such a way that they conform to the constraints imposed by their (grammatical) knowledge of language, and likewise, how they use it to interpret sentences as acts intended to be instrumental in the achievement of some goal.

While it has long been argued (Green, 1974a; Morgan, 1972, 1975) that one gets a distorted view of the total human linguistic competence by

viewing competence as being simply mastery of some complex homogeneous formal system (the object view of language), I suggest here that this competence can be less misleadingly characterized as a function of two separate but interacting systems: a grammar (which would characterize the language as a formal system, i.e., a system of forms), and a pragmatics, which would include, among other things, techniques and strategies for using the grammar along with knowledge of the world and cultural knowledge about the language, in order to communicate. The distinction is something like the distinction between knowledge of the formal properties of hammers (appropriate proportions of head, neck, and handle, appropriate properties of materials of construction, etc.) and knowledge about the use of hammers (how to use one effectively, how children use them, their symbolic values, etc.).

In the next section, I will demonstrate, first abstractly, then with an extended example, the complexity of the choices involved in making a very simple hypothetical utterance. After that, I will describe how certain kinds of non-linguistic knowledge must be involved in making these choices. Subsequently, I attempt to characterize three kinds of linguistic knowledge: (a) knowledge of language proper, or grammar, (b) knowledge about the use of particular forms, and (c) knowledge about communicating. Finally, I discuss some of the implications of my characterization of total linguistic competence.

An Example

Let us take it as given that even though language is used for other purposes besides communication, communicating is one of the primary purposes for which language is used. I would like to sketch now what is involved in what is usually assumed to be the simplest kind of communication, the direct communication of information. I will focus on just what kind of role knowledge of grammar plays in communication.

The speaker's goal in attempting to communicate something (let us call it T) is to cause to be reproduced in the addressee's mind a model (call it T') of this T that is "on the speaker's mind."

The speaker must make a number of choices in carrying out a plan to do this. These choices are almost always made subconsciously and without the speaker's being aware of the need to make them. Furthermore, they are surely not made as methodically as it will sound like they could be; it is commonly observed that people begin to speak before they know all the details of how they are going to express what they want to communicate. Some choices may be made without considering all the possible alternatives; how the range of alternatives to choose from arises is a mystery. But these choices must be made at each of the levels I am about to describe in performing a speech act or intentional utterance. Given the intent to communicate T, the speaker must select some constellation of aspects of T, T.1 ... T.n to convey relevant parts of T in such a way that the addressee can reasonably be expected to infer T'. The speaker must also order T.1 ... T.n in the most effective order, and choose suitable expressions for T.1 ...

T.n from among the possible linguistic expressions t.1.1 ... t.1.n, t.2.1 ... t.2.n, ... t.n.1 ... t.n.n that the grammar provides. In addition, the speaker must arrange the chosen linguistic expressions t.1.i ... t.n.j according to the rules of the grammar and whatever principles of rhetoric are available and deemed relevant.

In the actual production of speech these are almost certainly not performed as sequential acts. Furthermore, subconscious evaluation of alternatives at one level may result in changing the range of alternatives at other levels, and for other items at the same level. A proper flow chart probably could not be drawn which would accurately represent the subconscious reasoning of an actual speaker in subconsciously planning an actual utterance.

I have consciously avoided in my description such expressions as "forms which will carry (or convey) the intended meaning," for expressions of this type imply that communication is the simple and direct process of packing thought into words or larger linguistic forms, and sending them to be unpacked, unchanged, upon arrival. Reddy (1979) makes a good case for the perniciousness of this pervasive conduit metaphor, and for the view that our understanding of what goes on in communication will proceed much faster if we abandon this metaphor, in favor, perhaps, of a view in which what is "sent" in communication is something on the order of a near-cryptic blueprint for the creation of a model of something inalienably possessed by the speaker.

I offer an example to illustrate what all of this involves. This description may sound like "anthropomorphized" conscious, rational planning and decision-making, but that is only because it is easier to talk about the alternatives as if the evaluation and choosing were the result of conscious, deliberate thought. If I slip and use verbs like plan or decide, please remember that I do not mean that it is always at a conscious level; I am arguing that the evaluation is the result of rational mental activity, or reasoning, but at a level well below that of conscious deliberation.

Suppose that we have a window into the mind of a hypothetical speaker, Barbara (hypothetical, remember, but no more ideal than you or I). She is in the midst of telling you about an incident she has witnessed which involves Mr. X and an acquaintance of hers, and which reflects badly on Mr. X's character. She comes to a point where she wants to say what happened next with respect to one of the protagonists. What does she say?[1] In her mind's eye, she can see a young man, wearing a worn pair of blue jeans, and a Levi jacket over a muted plaid dacron and cotton sport shirt, open at the neck. He has on a pair of Converse tennis shoes, no socks. His untrimmed blond hair is streaming behind him and his blue eyes have a kind of wild look in them as he flings open a door and rushes out of X's study, and into the hall, where she is trying to read a book. She must select which details need to be conveyed in order for her to accomplish her purpose in relating the incident. Is there any reason to refer to what the individual was wearing? To his hair and eye color? His name? The fact that he is a student in computer science? That he is from California, that he is

unmarried, etc.? Is it relevant to mention that he interrupted her reading? And is it redundant to mention that this event occurred later in time than the events she has just recounted? Relevant that it happened at about 5:45, just as the sun was going down?

To keep things simple, suppose she concludes that it is not necessary to mention the relative time sequence, as it will be inferable from a reference to the absolute time of the event, and that the only properties of the individual that are relevant are ones that she has already mentioned, namely his name and the fact that he is wearing a Levi jacket. His change of location is the crucial fact to be conveyed by her incipient utterance, along with his manner of locomotion. Suppose that Barbara feels justified in assuming that what she has already said has enabled you to understand that this individual, along with two others, was being interrogated in the study, and that she has just said that she could hear raised voices and the sound of objects of various composition crashing to the floor. Since this is a story about the individual and X, not about Barbara, and she has just been talking about unseen events in the room they were occupying, it may be more relevant for her to say that he came out of the room, where he was than to say that he came into the hall, where she was, especially since she has not mentioned where she viewed the events from, and the individual's momentary presence in the hall is not important to the story.

Because this utterance will be within a narrative, rather than, say, a conversation about when this individual did what, it will be useful for Barbara to mention the time of the event at the beginning of the utterance

so that you can know where it fits. Then she could mention the individual and assert his departure from the study. Or perhaps she would feel it would be more effective not to mention the name of the agent of this action until after the action is described. For simplicity's sake, suppose she chooses the former option. Later on, possible motivations for other options will be discussed in more detail.

She must also choose linguistic expressions to refer to the time of the event, the individual, his action, and the environment in which it occurred. She could mention the time by saying 5:45, but shall she qualify it by saying around, or about, or shall she just say at? The way she knew it was about 5:45 was that she noticed that the sun was going down, and since it was mid-February, when sunset was just before 6:00, she knew that must mean it was about 5:45. The reasons she wants to mention the time at all are so that you will know that this event she is about to describe occurred after the ones she has already described and pinpointed in time, and so that you will have some idea of how long the interrogation lasted. Reference to the sunset would allow these inferences to be made in roughly the same way as would reference to clock time, so she could mention the time by saying As the sun was going down, or using some other expression referring to the sunset, but then the inferences would be less direct, and more tenuous, so she chooses clock time. Now, around, 'bout, or at? At is too precise, for it falsely implies that she knew exactly what time it was. Around seems too casual, implies that it was not particularly important what time it was. So she chooses about. I do not wish to imply that even subconscious

deliberation is this explicit. But the choice may be made subconsciously, and it is a motivated choice, and these are the kinds of motivations it must have.

Barbara could refer to the individual with a definite pronoun, if she thinks that will be sufficient for you to correctly identify which individual she means to refer to; as Jeff, for that is his name; or as the guy wearing the Levi jacket. Or, in the latter phrase, she could say man, or boy, or kid, or youth, or student, or probably lots of other things instead of guy. A pronoun will be insufficient to identify him for various reasons connected to the content of previous discourse and to the purpose of relating this narrative (cf. Kantor, 1977), and what he was wearing is irrelevant to the event Barbara wants to describe. So she selects Jeff.

Similarly, she must choose how to identify the manner of his going. Shall she say he ran, or rushed, or tore, or dashed, or flung himself, or what? Likewise, she has to select an expression to identify the room from which Jeff exited. Can she get away with there, or does she need a more specific term? If the latter, will room be sufficient, or would something more precise be better? Or would it be distracting? (Again, I do not wish to suggest that these are conscious decisions that speakers agonize over. But they are choices, and speakers do make them, on principled grounds that must be very similar to the ones suggested here.) In addition, Barbara must choose how to describe the direction of Jeff's exiting. Shall she say out of, or from within, or something else?

All of this has been largely pragmatics rather than grammar. The grammar provides the items from which to choose. The basis for making the choice is provided by pragmatic knowledge about what the addressee can be expected to know and to infer from what she says, based on knowledge of the implications of using a certain item in a particular class of cases. The ubiquity of general pragmatic knowledge in evaluations of subconscious speech plans will be evident from the description in the next section of the kinds of knowledge that contribute to the ability to make these choices.

Knowledge of grammar tells Barbara that the preposition about must precede the time expression 5:45, since English is a prepositional rather than a postpositional language. It tells her that making the word Jeff the subject of a predicate denoting an act of motion will convey the kind of proposition she wants to convey, and if the NP Jeff is going to be the subject of the sentence, it will precede the verb and the adverbial phrase, in that order, unless there is a compelling reason for the adverb or the verb, or both, to precede it, which for the moment we are supposing there is not. If Barbara had chosen to use a personal pronoun to refer to Jeff, the grammar would have told her that the appropriate form of the pronoun was the nominative case form he, rather than him. The grammar tells her that she must use an article with the noun room in the sense she intends, and she will have chosen, pragmatically, when she was choosing words, to use a definite rather than an indefinite article, for she will have assumed that because of that choice you will know that she means for you to understand that she is referring to a room which she expects you to be able to pick

out. The grammar tells her that the article, the in this case, must precede the noun room. And the grammatical knowledge that English is a prepositional language is again utilized to order the complex preposition out of before the noun phrase the room. Probably no more than a second has elapsed between the time Barbara conceived of conveying f to you and her utterance, About 5:45 Jeff ran out of the room.

This has been a sketch of what is involved, articulation aside, in the production side of communication. What about comprehension? Just as speech is a product of a system of acts which are intended to serve a goal, so comprehension, like cognition generally, is the result of attempts to interpret events (speech events) in terms of acts (speech acts, if you must) which are assumed to have been intended to accomplish some goal. When people observe something that they report as I saw him try to open the door, there is a chasm even between what is perceived and the proposition that such a sentence is used to express. What is seen is an individual doing something at a door. People interpret this action with respect to the door as doing something to the door, and impute to the individual the intention of performing that action for the purpose of achieving the goal of having the door be open.[2]

Thus, comprehension of discourse or text involves not only knowledge of language (a sine qua non--you cannot read a German novel if you do not know German grammar) but also knowledge about the use of language (what expressions are conventionally used for when they have more or less than a literal meaning (Morgan, 1978a). Comprehension of discourse also involves

knowledge of conversational and literary conventions (e.g., what kinds of questions require an answer, the convention of beginning a narrative in media res, narrator's presence, and author's, narrator's, and characters' points of view). Finally, comprehension of discourse also requires encyclopedic knowledge about the world, such as knowledge of individuals, of kinds, and of the consequences of events; knowledge about "human nature" and likely motives; and the ability to make inferences from conjunctions of facts of these various types.

What is "given," present to be interpreted, in comprehension is not the word or the sentence (or even the paragraph or the whole discourse or text---I prefer to use these two terms interchangeably) but the observation that "So-and-so has just said thus-and-such." The interpretation of this datum consists in inferring the intentions and goals of the speaker in saying "thus-and-such" and saying it in exactly the way he said it (Grice, 1957, 1975). Relevance and coherence, far from being linguistic properties of texts,[3] are functions of the relation between observed acts on the one hand, and goals, intentions, purposes, and motivations inferred or inferable by the hearer on the other. Since the notion of "text structure" depends on these notions, it too is a function of the hearer's presumed ability to infer goals, intentions, etc. from observed acts. The acts that are relevant to interpretation of intention may include not only speech acts of diverse types (ranging from the locutionary act and the classical kinds of illocutionary acts and acts of referring [Searle, 1969] to acts of mentioning, sequencing, intoning, pausing, describing, failing to mention,

implicating, etc.), but also acts that do not involve speech at all--e.g., gesturing, glancing, staring, winking.

The task in comprehension is to form a model of the speaker's plan in saying what he said such that this plan is the most plausible one consistent with the speaker's acts and the addressee's assumptions (or knowledge) about the speaker and the rest of the world. This is analogous in many ways to what happens when master chess players are asked to study a complex chess diagram in order to reproduce it from memory. In one experiment (De Groot & Li, 1966; Jongman, 1968), a significant number were able to, and were also able to perceive the best possible moves for both opponents. This means that, just as I claim is the case in discourse comprehension, in order to be able to say what was perceived, the chess masters had to interpret the diagram as a function of the participants' goals and plans. Having done so, it follows naturally that they would have opinions about best next moves. People must form such subjective models of each other's plans whenever they try to figure out why a speaker is saying what he is saying, as a means to trying to understand what a speaker means. These models are hypotheses, of course, and presumably are changed several times in the course of arriving at an interpretation.

Because the link between intentional acts--even speech acts--and their interpretation is so underdetermined by the objective data (that So-and-so has said such-and-such), and so dependent on the interpreter's beliefs about the actor's goals and motives, it should not surprise us that this link is a tenuous one, and that there will be many a slip twixt the cup and the lip.

Yet the authors of the following passage (Loftus & Fries, Note 1) were surprised and bewildered at the reaction of some of their colleagues to it. The text is the concluding paragraph of a six-paragraph editorial. In the preceding paragraphs the authors describe some documented cases where subjects in medical experiments suffered harm traceable to information transmitted to them in the course of gaining their consent.

> The features of informed consent procedures that do protect subjects should be retained. Experimental procedures should be reviewed by peers and public representatives. A statement to the subject describing the procedure and the general level of risk is reasonable. But detailed information should be reserved for those who request it. Specific slight risks, particularly those resulting from common procedures, should not be routinely disclosed to all subjects. And when a specific risk is disclosed, it should be discussed in the context of placebo effects in general, why they occur, and how to guard against them. A growing literature indicates that just as knowledge of possible symptoms can cause those symptoms, so can knowledge of placebo effects be used to defend against those effects. A move in this direction may ensure that a subject will not be at greater risk from self-appointed guardians than from the experiment itself.

The authors felt (Note 1) they were advocating investigation of ways to present information to potential experimental subjects about the risks of participating in an experiment that would lessen the possibility of harm

resulting from the information itself. But a number of the people who read the editorial saw it as formulating an excuse for not telling potential experimental subjects the full truth about the risks involved so that they could be more easily manipulated, and perhaps persuaded to "voluntarily" participate in experimentation which might involve more risk to mental or physical health than they would freely take.

When I speak of plans, I am talking about something quite complicated. The plans I am referring to have embeddings, and not only in the important sense demonstrated in the discussion of the motivations for Barbara's sentence about Jeff, where a form is chosen to aid in accomplishing some purpose which is instrumental for the achievement of some higher-level goal, and so on, for an indefinite number of levels. But, equally important, a plan may make reference to a co-participant's model of the plan (Bruce & Newman, 1978). Thus if the speaker (S) is trying to deceive the addressee (A) into believing that S believes some proposition (p), A can pretend to be deceived, and S can pretend that he believes A is deceived, and A can plan his acts in such a way that it should appear that A is deceived by S's secondary pretense, and so on, generating plans that are more and more convoluted and tightly interwoven. There is no limit in principle to the number of possible self-embeddings of this sort, either.

The implementation of the plan is also complex in that at any given point in the implementation, various subparts of the plan are being carried out simultaneously. While Barbara is saying About 5:45, she may also be selecting a way to refer to Jeff and to describe his act, and also

evaluating the relative merits of referring to Jeff next, or leaving that until after she has described the exit from the study. The implementation of plans is further complicated by the probable fact that the process of evaluating choices may generate new goals (or changes in the original goal), so tne plan may be constantly changing, in addition to being implemented simultaneously on different levels. While the prospect of making conscious decisions under comparable circumstances sounds like a formidable one that would challenge the faculties of the brightest and most energetic of us, even the dullest and laziest individuals seem to manage it at a subconscious level. Evidence of making such choices can be seen in hesitations and false starts when a speaker begins to say something, then back-tracks to say it in another, presumably better, way. For example, in retelling the story of Dorothy and the Wizard of Oz, a child began an episode by saying:

> So she walked on and came to [pause] the Tin Woodman--to something she thought was a tree. She knocked on it. She said, "Oh, a tin man." "Where do you first want to be oiled? she said. He said, "In my chest." So. "Where do you want--She oiled him in his chest and then she said, "Where do you want to be oiled next?" she said. "In--" He said, "In my legs." "Where do you want to be oiled third?" she said. He said, "In my sh--arms."

The hesitations and false starts indicative of "on-line" planning are underlined. We see the child start to say a sentence ("Where do you want--") then interrupt it with material she has realized she wants to

supply so that the content of the interrupted sentence can be properly appreciated (that Dorothy complied with the Tin Woodman's request and oiled him in the chest before asking where he wanted to be oiled next). In the next sentence, she decides, after starting to report a direct quotation, that it will be better, presumably clearer,[4] to give a quote frame ("He said,") first. In the last sentence, she starts to say shoulders, then decides that arms is a better (perhaps more accurate) lexical choice. Mature speakers may not make as many false starts, but there is no reason to believe they do any less planning or choosing, and it is likely that there is just as much interactive on-line processing in interpretation of discourse (cf. Marslen-Wilson & Tyler, Note 2).

Kinds of Knowledge Required for Successful Communication

In this section I will sketch in a little more detail what kinds of faculties and knowledge are used in making the various choices that allow us to communicate by using language. Let me stress that it is not my intention to provide a model of communication, or even of speech production, but only to indicate some of the relationships among the things which such models will have to include.

Basically, in addition to knowledge of language, language users must employ their general reasoning (or problem-solving) ability, their general (cognitive) powers of observation, memory, and imagination, and a number of different kinds of knowledge of the world. These include knowledge of individuals (Jeff Graham, Chicago, the United States, the hearer, etc.), knowledge of perceived kinds[5] (cats, clocks, running, threatening, etc.),

possibly hierarchically organized,[6] and knowledge of relations (in, about, etc.). As a subcase of this kind of knowledge, the language user knows the names of individuals and kinds. Thus, he or she knows that a certain individual is called Jeff Graham, a certain place called Chicago, objects with certain more or less definite characteristics (Stampe, 1972; Rosch, 1973) and/or used for certain purposes called "clocks," activities of a certain more or less definite kind called "running." Thus, I am suggesting that it will be more useful to consider it a fact about clocks that they are called "clocks," than to consider it a fact about the word clock that it refers to or is used to refer to clocks, just as it will typically be a fact about a certain individual that he is called, say, Jeff Graham, and not a fact about the name Jeff Graham that it is used to refer to that individual. I do not deny that the fact that clock is used to refer to clocks is simultaneously a fact about the word clock, but there does not seem to be any point to saying that that fact is part of grammar.[7]

It is perhaps worth noting that the notion of words "having meanings" or "meaning something" comes relatively late in language acquisition. Very young children ask for the names of things, never for the meanings of the words that are the names. A 2-year-old asks, "What's that?" and is told, "That's a scale for weighing coffee beans." It does not occur to him to ask "What's scale mean?" or even "What's weighing mean?"[8]

Treating knowledge of the appropriate words to use to refer to things as a function of knowledge about the things seems appropriate for most nouns and many verbs, adjectives, and prepositions. It may not be appropriate for

words whose use resists a perceptual analysis and requires a logical one instead, like realize, necessary, and universally (cf. Lakoff, 1970).

An important question that arises if one takes the point of view that the use of words to refer to things is basically a function of knowledge of the things, not the words, is: What account can be given of speakers' ability to create novel names for things and actions? This problem has been taken up in detail by Levi (1978) and Clark and Clark (1979), with Levi claiming it is partly grammatical knowledge, and Clark and Clark claiming it is entirely pragmatic knowledge. Levi claims that the grammar imposes certain restrictions on what a novel but compositionally created name could be intended to transparently refer to; the Clarks claim that all restrictions are pragmatic in nature. The accounts differ in that the Clarks' does not distinguish between conventionalized use, principled use, and nonce use (where the reasonableness of expecting the addressee to infer the referent correctly is highly dependent on context and intimate mutual knowledge), while Levi strictly distinguishes these three kinds of use. It is not clear how to test the comparative correctness of these two accounts, but as far as I can see, either position is compatible with the claim that knowledge of what to call things is derivative of our knowledge about those things.

The knowledge of the world that is critically used in speaking will also include knowledge of the Cooperative Principle (Grice, 1975, p. 45):

> Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose . . . of the [enterprise] in which you are engaged,

and the "maxims" which follow as corollaries (cf. Grice, 1975, pp. 45-46):

> Maxim of Quality: Make your contribution one that is, to the best of your knowledge, true. Do not say what you believe to be false, nor that for which you lack adequate evidence.
>
> Maxim of Quantity: Make your contribution as informative as is required, and no more informative than is required.
>
> Maxim of Relation: Be relevant.
>
> Maxim of Manner: Avoid obscurity, ambiguity, and unnecessary prolixity; be orderly; etc.

Knowledge of the hearer includes not only the same kinds of knowledge that the speaker has about <u>other</u> individuals, such as personal history, attitudes, affiliations, kinship ties, and the like, but also estimates of the hearer's knowledge of the world, including what he can observe at the time of the speech act, his relevant beliefs, his view of his role in the ongoing conversation, his model of the speaker's model of the world, and of the speaker's goals and plans for the ongoing discourse, and also his reasoning ability--in particular, his ability to draw the intended inferences from acts the speaker has performed in accordance with his or her plan for accomplishing his or her goals in the discourse.

In addition, knowledge of (or beliefs about) the properties of individuals and kinds, in conjunction with the general reasoning ability, allows the language user to calculate the consequences of events and states, whether physical, emotional, interpersonal, economic, or whatever. Sometimes this kind of knowledge of consequences becomes highly internalized and does not have to be reasoned through, as for example when my knowledge of the consequences of causing a bicycle's pedals to turn in a certain way while seated on the seat and grasping the handlebars results in behavior sufficiently automatic for me to ride safely, or when my knowledge of other consequences is internalized in more or less autonomous routines that make it possible for me to walk and chew gum at the same time without concentrating on either. Knowledge of how to use language to communicate (strategy and tactics) is of this general kind. Some of it, such as the knowledge that if someone asks you to do something, they probably believe that it has not been done, and that you can do it, and probably want it to be done (Searle, 1969), is highly internalized and automatic. Other aspects are derived in the course of attempting to communicate. For instance, if Barbara knows that you can insult someone by comparing them to someone else (or some class of people) whom they despise, she may know or infer that she could insult her friend Alexander by comparing him to his mother, e.g., by saying You sound just like your mother, or That's just what your mother would say, or You remind me of your mother, etc. Knowledge of communicative strategies may vary greatly among individuals in degree of automaticity. This may be the case, for instance, with the knowledge that asking an

irrelevant question whose answer is obvious (e.g., Is the Pope Catholic?) can be expected to convey the sentiment that the answer to a question just posed by the addressee is equally obvious, and of the same polarity. Similarly, individuals may vary in the degree to which they have internalized the knowledge that conjoining an obviously false (or obviously trivial) assertion (And I am the Queen of Romania, Water is wet) to an assertion just made by your addressee (cf. Morgan, 1978a) should convey your opinion that your addressee's contribution is equally obviously false or trivial. Individuals almost certainly vary in the degree to which it is automatic for them to exploit the knowledge that expressing a proposition as the grammatical subject or object of a factive verb may cause their addressee to assume the proposition is true without their running the risk of the addressee's evaluating it (Horn, Note 3). Some people are masters of this "factive sneak"; others, it may never occur to.

Let us now examine how a speaker might utilize these various faculties and kinds of knowledge in attempting to communicate, by looking at our previous example in more detail. Let us suppose that the context for the utterance discussed earlier is that Barbara wants to cause you to mount a campaign to remove Mr. X, a district attorney, from office (that is her Goal). She realizes (whether by reasoning or automatic strategy is irrelevant) that she should be able to do this by causing you to have a strong negative opinion of him (this becomes Subgoal A), and that this can probably be accomplished by telling you a story (whether true or not is irrelevant) which reflects badly on his character (this becomes Subgoal

A.1.). After selecting a particular story (Subgoal A.1.a.) about an incident involving him, Jeff Graham, and a couple of others, Barbara begins to execute the plan for achieving the Goal by means of Subgoal A, which will be accomplished by A.1., which will be achieved by accomplishing A.1.a.: telling the story referred to earlier. Eventually she arrives at the stage described earlier. Subgoal A.1.a.n. is to enable you to add to your model of the event she is describing the aspects of T (described earlier) that are in her "mind's eye" sufficient to enable you to reconstruct the parts of the event relevant to accomplishing A.1.a., A.1., A, and finally, the ultimate Goal.

Subgoal A.1.a.n.a. is to determine just what those relevant aspects are. To determine this, Barbara has to take into account a number of things. First of all, of course, she has to have a clear enough perception, or memory, or reconstruction of the event to be able to make choices. Given this, knowledge of the Cooperative Principle: "Make your contribution such as is required at the present stage of the enterprise" enables her to seek the appropriate level of detail, while conveying enough to get to the point as directly as possible. Of the corollaries to the Cooperative Principle (CP), the Maxims of Quantity and Relation constrain her to make choices such that she does not assert things that she expects her addressee to already know (e.g., that Jeff is in the room she has referred to), or assert or presuppose things that are irrelevant to her goals or subgoals in communicating (e.g., the details of Jeff's apparel). In another story, or at an earlier point in this story, such details might be relevant, if, for

example, they could be construed as indicating something relevant about Jeff's character or economic status, say. To apply the CP, and the maxims in particular, Barbara obviously must have access to a model of her addressee's model of the event she is describing, and to a model of his model of the world in general. Without it she cannot decide if some relevant information is redundant or not. This entails, in addition to knowledge or beliefs about the beliefs and attitudes of the addressee regarding the world in general, knowledge of the history of the ongoing discourse, since she needs to know what the addressee can be expected to know from what she has told him, and what, judging from the presuppositions and assertions of his contributions, he must already know. In the case at hand, she must know enough about the addressee to estimate the probable efficacy of using various kinds of characterizations to refer to the individuals involved.

In addition to knowledge of what the addressee knows because she's told him, and what he must know that she did not have to tell him, she has to have an estimate of the addressee's ability to make inferences. If she has said something that should cause her addressee to believe that Jeff entered X's office around 5:00, when she says that he exited from it at 5:45, she may rely on her estimate of her addressee's reasoning ability to infer the duration and perhaps the character of Jeff's stay in X's office. It is this kind of knowledge of the addressee that influences Barbara to tell this story in one way when she is talking to a colleague, and another way when she is talking to a 4-year-old child, indeed, to tell it one way to her own 4-year-old, and differently to someone else's.

Now, Barbara must make use of her knowledge of communicating--in particular, her knowledge of the properties (and therefore, effects, and thus possible purposes) of relative sequential position of content items, to choose an appropriate order in which to present the aspects of T that she will have chosen to convey. Again, this necessarily requires use of her knowledge of the addressee's knowledge of the world (including, but not limited to, his model of the incident being described) and his reasoning capacity. This aspect of Barbara's knowledge of discourse organization enables her to infer that if she is interested in having you attend to the sequence of events, it will be helpful to give the time indication (whether by point time, or duration) at the beginning rather than at the end of the utterance. It will enable her to infer, generally, that information that will help you to relate the content of the present utterance to the content of previous discourse is appropriately ordered before the new content which is the "point" (Subgoal A.1.a.n.) of the present utterance (Green, in press). This might have made it relevant, in another context, to prepose the directional phrase, and begin with Out of the office or Into the hall. Knowledge of the principles for organizing discourse enables a speaker to infer that unpredictable information, if relevant and important, may be highlighted by being ordered at the end of the utterance (Green, in press). In another context, this might have motivated any of a number of constructions which would have allowed the agent phrase (Jeff) to appear at the end of the sentence.

As a final example of the kind of knowledge that I am calling knowledge of discourse organization, I include the knowledge that contrasted items or items offered as corrections may appropriately be ordered at the beginning of the utterance, even if they are the most important and unpredictable content in the utterance. Thus speakers know that discourses like (1-3) are well-formed:

Corrections

(1) A: So you don't like bananas.

B: Oh yes, baNAnas I like.

(2) A: Don't you like any fruits?

B: Oh yes, baNAnas I like.

Contrasts

(3) A: So you like papayas.

a. B: No, baNAnas I like.

b. B: No, paPAYas I hATE.

And they know that discourses like (4) are not well-formed.

(4) A: Do you like fruit?

B: Oh yes, bananas I like.

Many students of language have been tempted to generalize over these principles, and assert that all discourse is governed by a single functional principle of grammar which orders "old" or "given" "information" before "new," or topics before comments, or thematic "information" before rhematic (Kuno, 1972, 1975; Firbas, 1964), but this is almost certainly a mistake. First of all, often no single item in an utterance can be singled out as

representing newer or more unpredictable information than the others; the present case, the sentence in the story about Jeff, is an example of this sort. What is new is the asserted relation among the items. Second, it is useful to distinguish among reasons for choosing a particular order over others (e.g., connection, identification, contrast, introduction--see Green, in press). Assuming a single governing principle for all discourse makes these "choices" appear predetermined by the history of the discourse, plus maybe a model of the content of the discourse and one of the world in general, but not involving the speaker's mind or intentions and purpose at all, which seems to me hardly a plausible assumption.

Estimates of the addressee's knowledge (of the world, the model, and the principles of rational communication) and of the addressee's reasoning capacity are also relevant to choosing an order for the content to be conveyed, in that, for example, a speaker must assume that the information he or she is assuming will function connectively is in fact already assumed or trivially inferable by the addressee. In the limiting case, if the speaker estimates that he lacks the ability, for whatever reason, to make correct inferences from word orders that are supposed to be "stylistic variants," she will have to choose some other means of inducing the inferences, such as intonation, or being more explicit.

Let us turn now to exploring what kinds of knowledge are necessary for verbalizing the more or less discrete concepts (T.i. ... T.j.) that the speaker chooses to express. I say "more or less discrete" for two reasons. First, it is not clear to what extent the "concepts" of, say, action and

patient, are discrete relative to an event, and second, it is quite likely that the speaker's choice of what content to convey will be revised during the process of choosing words, perhaps by increasing or decreasing the amount of detail to be included.

To begin with, the speaker relies on her knowledge of individuals and kinds to provide a pool of possible lexical choices for various concepts to be expressed. For example, Barbara's interpretation of Jeff's activity in departing from X's study has involved classifying it as belonging to a certain kind. Her knowledge of this kind tells her that it can be referred to as running, or rushing, or dashing, or hurrying, or tearing, or flinging oneself, or hightailing it, etc., depending on details of performance and attendant circumstances. Jogging, trotting, and sprinting, however, would not, presumably, arise as possible choices, because the inferred motivation for performing them would define them as belonging to a different kind.

Knowledge of (logical) relations among kinds is also called upon in evaluating choices, in conjunction with perception or memory. For example, to choose among run, dash, and hurry, it may be relevant to know that saying that someone dashed entails a claim that he ran (because carrying out the activity called dashing entails the activity called running), while saying that he hurried does not (because doing what hurry refers to does not entail running), and it may be necessary to perceive or recall the event in order to determine which verb provides a more accurate description.

In addition, knowledge of the Cooperative Principle is required so that the speaker can utilize knowledge from a variety of sources in the

evaluation of possible choices. Information from memory or perception will, as I have already mentioned, be used in evaluating choices for conformity to the Maxim of Quality: Don't say that which you have no reason to believe to be true. Knowledge about rational communication is also used in evaluating possible choices for relevance, rejecting those which, for example, have irrelevant implications which might distract the addressee from what the speaker intends him to attend to. This is quintessentially knowledge of the principles of presupposition and implicature. In the instance at hand, such knowledge would cause Barbara to reject the form someone as an appropriate way of referring to Jeff, since the use of such an indefinite expression would implicate that identification of the individual was not important.

Fourth, estimates of the addressee's knowledge of individuals and kinds and of his model of the event being described by the speaker are used in evaluating possible choices for conformity to the Maxim of Quantity. Will the expression (e.g., hurried, the guy in the Levi jacket) be sufficient to induce the desired inferences and identifications? Will it contain annoyingly or confusingly redundant information (e.g., my friend Jeff Graham from Computer Science who went into X's study with X)?

Last, knowledge of the history of the ongoing discourse is necessary for determining whether certain choices will conform to the Maxim of Manner. Will it be clear who Barbara is referring to if she refers to Jeff as he, or has she not been talking about Jeff in some time? Generally, keeping track of the main topic of the discourse and the relation of the subtopics to it and to each other will be necessary for making choices both of order and of substance.

Finally, let us turn to how the goal (A.l.a.n.d) of arranging the lexicalized or partially lexicalized terms in accordance with the rules of the language is achieved. Not only is knowledge of syntax required, but other kinds of knowledge as well. Knowledge of syntax and semantics must be utilized in at least sorting out possible grammatical relations among the potential terms for the concepts the speaker plans to relate in his or her utterance, and rejecting those grammatical relations and combinations of grammatical relations that will be unsuitable. Since lexical choices may partially predetermine possible grammatical relations (buy vs. sell, for instance), this is one point where evaluating may result in revising earlier choices. A speaker must know what categories are obligatory in surface sentences of the language (e.g., the fact that in English, except under certain special conditions [Schmerling, 1973], subjects are obligatory, that in English, an article is ordinarily required with the choice of a common count noun). He or she must also know what syntactic relations entail a fixed sequence of terms, e.g., that in English, articles must precede nouns, that prepositions in English precede their objects. The speaker must know the range of possible syntactic constructions which will allow the terms or concepts he or she has chosen to express (i.e., T.i. ... T.j.) to be expressed in the order he or she chooses to express them and with suitable grammatical relations. In the case we have been looking at, Barbara knows that in addition to the canonical simple, active, declarative Subject-Verb-Adverb(s) construction, two other constructions would present the terms "Jeff," "ran," and "out of the room" in the same order. She could use a

Left Dislocation structure and say Jeff, he ran out of the room or a Cleft, and say It was Jeff that ran out of the room. Last, the speaker must know what morphosyntactic conditions must be met for the use of optional constructions. Had Barbara chosen to express the direction of movement before identifying the agent and the manner, the options available would depend on whether she would choose to use a pronoun to refer to Jeff. The rules of syntax allow her to say Out of the room ran Jeff, but not Out of the room ran he.

In addition to this knowledge of syntax, a speaker must be able to utilize specific knowledge about the use of language--in particular, knowledge of what pragmatic conditions are required for the use of particular syntactic constructions which conform to the chosen ordering of elements. The pragmatic conditions I have in mind are ones which relate to assumptions about discourse topic (e.g., Passive, Cleft [Prince, 1978], Inversion [Green, in press]), attitudes about consequences to participants (Passive [Davison, 1980]), beliefs about participants and their relationships (e.g., Passive [Lakoff, 1971], Raising [Postal, 1974], Dative Movement [Green, 1974b], etc.).

These are conditions on the use of various English-specific constructions, but that fact does not mean that they are part of a person's knowledge of English grammar. To claim that they were would be like claiming that the principles of nutrition and aesthetics that are required for the preparation of attractive meals were part of a person's knowledge of cooking. But clearly one can learn to prepare elegant dishes perfectly

without knowing anything of nutrition, menu-planning, or table arrangement. Knowledge about English is distinct from knowledge of English grammar. A grammar need only specify possible forms without regard to their appropriate use; actual usage is a matter of general cultural assumptions, and may vary according to sub-culture-specific constraints (cf. Labov, 1972) and sub-culturally defined notions of aesthetics and appropriateness.

In general it seems to me preferable to say that the use of bizarre forms is made conditional by knowledge about communicating, or about language use (i.e., pragmatics), rather than ruled out by the grammar, reserving this ultimate sanction for forms that no one could ever want to use while supposing correctly that he was speaking grammatically. In a way, this is equivalent to demanding a language- or culture-internal explanation for the bizarreness of every bizarre form, and attributing its bizarreness to ungrammaticality only when there is no independently motivated pragmatic explanation for the fact that there is no conceivable situation in which it would be an appropriate thing to say. A form like When in he came, I was doing the dishes is pragmatically pointless (or dumb, cf. Green, 1976, and in press) because the conditions for preposing the temporal clause cannot be fulfilled at the same time as the conditions for preposing the adverb in, and the bizarreness is constant no matter what the form or content of the subject of the subordinate clause is. (If it is a non-pronominal form, it may even be inverted with came.) But Out of the room ran he is ungrammatical, because substituting a coreferential (in context) non-pronominal form (e.g., John, the teacher, the tall one, Hee[9]) makes the

sentence usable. The fact that grammatical form determines the difference between possible and not makes it a grammaticality difference in this case. In the other, grammatical form makes no difference, so the difference must not be one of grammar.

Finally, a speaker may require knowledge of the history of the discourse (e.g., who has been referred to before, what the current topic is), as well as knowledge of the event, of individuals and kinds, of the Cooperative Principle, and of the hearer's model of the world, in order to determine whether pragmatic conditions on the use of particular language-specific constructions are met; for example, to determine whether a subject-cleft like It was John that ran out of the room will be appropriate.

This concludes what I have intended as an illustration of how various kinds of knowledge are utilized in the unconscious choice among alternatives that culminates in uttering something with the intent to communicate. What I would like to do in the next section, before discussing a few implications of this view of communicative behavior and the role of linguistic knowledge in it, is to discuss the constitution and character of linguistic knowledge. I will first distinguish among knowledge of language, knowledge about language, and knowledge about communication, and then discuss the constitution and character of each.

Kinds of Linguistic Knowledge

By "knowledge of language" I mean the kind of knowledge that could distinguish speakers of English from speakers of Tagalog or Aleut, by virtue of their being speakers of that language (excluding, therefore, differences

that arise due to their being members of the culture of that language community). Knowledge of language is roughly the same thing as grammar in the traditional sense (phonology, morphology, and syntax), plus a compositional semantics of some kind. Universal properties of grammar do not enter into such a characterization insofar as they are either (a) innate, and not learned, and thus, not knowledge, or (b) functional, and evolved to meet communicative needs, and hence only fortuitously universal; if societal needs changed somewhere, they might cease to be universal, and come to be potential distinguishing properties.

I use "knowledge about language" and "knowledge about the use of language" to refer to principles for using or exploiting the forms provided by the grammar of the language to achieve goals. This knowledge is separate from knowledge of language per se, and from knowledge about communicating, but all are required equally for using language effectively. Knowledge about communicating ranges from non-linguistic knowledge (e.g., what is conveyed by a wink, how to organize discourse) to knowledge which is not specifically linguistic (knowledge of the principles of referring, politeness, implicature, etc., which could be carried out by non-linguistic means as well as linguistic ones) and knowledge which is only incidentally linguistic (e.g., knowledge of whatever principles constitute style and art in speaking and writing--principles that could be realized in dance or art, say). While knowledge about communication might have some culture-specific details, for example, what counts as polite, it does not have language-specific details. It could conceivably be almost identical for speakers of

English and speakers of Tagalog. Nonetheless, I suspect that cross-cultural similarities and homologies of both pragmatics and grammar would be better attributed to independent development shaped by the same goals and forces that arise out of the basic human condition, than to innate physical structure.

Knowledge about the use of language is language-specific only insofar as it must make reference to specific forms of the language; e.g., the, idioms, matters of register, syntactic irregularity, communicative effects of various syntactic constructions. But of course it must be integrated with knowledge of communication in order for a person to be able, for example, to produce successful referring expressions or distinguish between polite and impolite usage. If grammar provides the set of tools and materials for communicating, pragmatic knowledge about the use of language and about communicating provides the techniques and the art that distinguish finely crafted artifacts from other products. Mature speakers of a language will vary much more in their pragmatic competence than in their linguistic competence. Some speakers may be brilliant at it, others, the ones people call inarticulate, just barely competent. And, unlike the case with the acquisition of linguistic competence, the ability to acquire knowledge about the use of language and about communication may continue at least into middle age.

Having made a distinction between knowledge of language and two kinds of pragmatic knowledge, I need to clarify what kinds of linguistic knowledge I see as constituting knowledge of language. There is phonology, of course--

the inventory of sounds, and principles for pronouncing them in various combinations. Knowledge of language also includes knowledge of syntax, some set of principles, autonomous of semantics and pragmatics, for combining and ordering grammatical categories. It might include phrase structure rules, and transformational rules, and constraints and filters, or it might not, but it wouldn't need selectional rules and perhaps not subcategorization rules, because the work they would do would be adequately covered by other cognitive processes (cf. McCawley, 1968).[10] The syntactic rules won't need pragmatic conditions on their application or abstract excrescences in the deep structures of phrase-markers to which they apply, to do the same work (in the Generative Semantics tradition) because the use-conditions on the constructions these rules derive will not be part of the grammar, but part of the speaker's knowledge about the use of the language. The grammar specifies the form sentences and phrases may take. Knowledge about the use of language includes specification of the purposes for which it is appropriate to use certain kinds of structures generated by the grammar.

There must also be a lexicon, of course, but it may be little more than a list of the words of the language. I would argue that the pairing of individuals and kinds with words that can be used to name or refer to them is not basically knowledge of language, but a special kind of knowledge of the world: knowledge of the relation between things and their names. Knowledge of things includes knowledge of what they are called. Among the things we know about animals of a certain kind (or kinds) is that they are called "dogs." We know about a number of kinds of activities that they are

called "cutting."[11] We know that an action of a certain kind is called "accusing," that an action of a slightly different kind is called "criticizing" (Fillmore, 1969), that a body of printed matter of a certain sort is called a "book," that if it meets certain additional criteria (i.e., is an object of a slightly more differentiated kind), it may also be called a "tome." We know that an abstract notion of a certain sort is called a "plan," that a similar one that has certain additional characteristics is called a "plot."

In any case, it is clear that strictly linguistic competence includes knowledge of a lexicon pairing words of the language with their underlying phonological forms, and indicating phonological and morphological regularities and irregularities. We need not assume that the lexicon includes statements to the effect that slow is the opposite of fast; slow is simply the NAME for the kind of THING that is opposed to the kind of THING that we CALL fast. It is not clear whether there is any analytically motivated reason to insist that the lexicon include knowledge of entailments (e.g., of murder, orphan, or forget) since equivalent knowledge may already be available as part of the knowledge of the (cultural) classification of kinds.

Finally, strict linguistic competence must contain a compositional semantics--a set of principles mapping lexically instantiated syntactic structures onto "sentence meanings." Since English and Tagalog have different sets of surface syntactic structures, and possibly different sets of surface grammatical relations, they will have different semantic rules.

We note here that it may not be realistic to assume that an individual's internalized grammar is determinate, complete, and consistent, as a grammar would have to be in order to generate all and only the sentences of a language. Even in the entirely competent adult, knowledge of language, or grammar (using this term in a broad sense, to include phonology), may be incomplete and/or indeterminate (cf. Fillmore, 1972; Morgan, 1972). Knowledge of phonological underlying forms or rules may be incomplete in that there are often words which a person may know exactly how to use but be unsure how to pronounce; porcine, cadre, and heinous are three such words that come to mind.

The situation is much the same with respect to lexical knowledge. Some people, myself for instance, know that there is a word, coy, say, that refers to a kind of behavior, but they may not know exactly what kinds of behavior count as coy. This is incomplete knowledge, as was the example from phonology.

Knowledge of syntax is likewise incomplete and/or indeterminate. In a paper on English verb agreement, Morgan (1972) suggested that the variation across speakers' judgments, the instability of individual speakers' judgments on the same sentences, as well as speakers' inability to judge and outright refusals to judge the grammaticality of sentences like those in (5) could be explained by supposing that what speakers shared as a rule of Verb Agreement was a very simple rule that worked most of the time, but simply didn't cover cases like those in (5).

(5a) There is/are a man and two women in the room.

(5b) Either two thieves or a magician was/were in the room.

(5c) Is/Are John's parents or his sister in Hawaii?

Some speakers might, on either an ad hoc or a permanent basis, extend their rule to cover whatever cases are encountered. This patching would account for some of the variation and some of the instability. Other speakers might fail to patch their grammars, and might respond to a request for a judgment by admitting inability to judge, by giving unprincipled, basically random, responses, or by resenting being asked to do something they have no means to do. This would account for additional variation and instability. Analysis of some questionnaires on Verb Agreement corroborated this speculation. Of 16 native speakers responding to a 133-item questionnaire, there were 16 different patterns of use of four patches or codicils to a simple rule of Verb Agreement, and many respondents indicated, at various points, inability to choose one alternative over the other.

This sort of indeterminacy is not limited to Verb Agreement. It has been found with coreference constraints as well (Green, 1973), and the unavailability of clear evidence that inverted subjects (as in 6a-b) remain subjects (Green, 1977) may indicate that the grammar is indeterminate on this point as well.

(6a) Standing in the corner was a Tiffany lamp.

(6b) In the corner stood a Tiffany lamp.

And there is no reason to suppose that these are the only cases of indeterminacy.

Semantics may not be indeterminate, but it may well be incomplete. That is, while the semantics must define the "meaning" of syntactic relationships like the subject-predicate relationship, say, or the verb-object relationship, there are a number of paratactic relationships within sentences, like those in (7-8), about which the semantics may say nothing at all.

(7a) The wind at his back, Roger headed for downtown Boston.

(7b) He was in the eternal act of removing a thorn from his foot, his round face realistically wrinkled with cruel pain.

(7c) She went out again, and bought the materials for whiskies and sodas, shuddering at the cost.

(7d) With the wind at his back, John took four hours to get to New York.

(8a) He balanced a thoughtful lump of sugar on the teaspoon.[12]

(8b) I'm going to have a quick cup of coffee, and then I have to get to work.

Sentence (7a), for instance, does not mean that Roger headed for Boston because the wind was at his back or when, or after, or although the wind was at his back, although in context any one of these might be a plausible inference. But (7a) means no more and no less than (9), and here the relation is simply not explicit.

(9) The wind was at his back. Roger headed for downtown Boston.

The inference of a causal or concessive or temporal relation isn't a semantic entailment, but an implicature induced by the juxtaposition of the

sentences and the assumption that the utterer is obeying the Cooperative Principle and intends the interpretation of one sentence to be taken as relevant to the interpretation of the other.

The knowledge one needs to have access to in order to plan and interpret communicative actions includes not only knowledge of language, but general knowledge about communication, and also more specific and culturally specified knowledge about the use of language. Knowledge about communicating is, strictly speaking, not linguistic knowledge. That is to say, it is not knowledge which is specifically linguistic. It includes knowledge of such things as principles of referring and interpreting references, principles of politeness, the knowledge necessary for successful use of indirectness, sarcasm, irony, and the like, and also principles for inferring illocutionary forces and for organizing discourse. It is, in short, knowledge of how to accomplish certain goals that are often realized by linguistic means, but that could in principle be accomplished by gesture, or in dance, or mime, or graphic art.

Knowledge about the use of language, however, is language-specific knowledge in that it is knowledge about a specific language. But it is not knowledge _of_ language. It is knowledge of (or perhaps more accurately, hints for) how to _use_ the grammar (the knowledge of language). It includes, for instance, knowledge of various kinds of language-specific conventions, of register, and of when and why to use various syntactic options. It also includes, among other things, the principles for inferring the reference of indexical terms, e.g., _I_, _here_, _now_. A competent language user integrates

knowledge about communicating and knowledge about the use of the language in order to use the grammar to communicate. The two are nonetheless distinct. This may be seen from the following two observations. First, knowledge about communicating may be non-linguistic as well as linguistic, as in our knowledge of when and why to use various communicative gestures such as winking, grinning, glaring, glancing away, throwing our hands up in the air, etc. And second, knowledge of the use of language doesn't always presuppose communicative intent. There are cultural rules for swearing and performing magic spells, even though as linguistic performances these presuppose no addressee, and may not be communicative.

Let us be a little more specific about the domains of these kinds of knowledge. Knowledge about communicating includes the highly complex strategies for choosing referring expressions, which involve not only the principles for the use of the definite as opposed to the indefinite article,[13] and how to exploit probable inferences of presupposition (e.g., in restrictive relative modifiers [Morgan, 1975]), but also the principles for using the same name, in conjunction with the Cooperative Principle, to designate any of a number of entities of quite different kinds according to what Nunberg (1978) calls Referring Functions (and what I call Nunberg functions). Thus, the phrase the newspaper might refer to a copy of the San Francisco Chronicle, an edition of the San Francisco Chronicle, the corporation which publishes the San Francisco Chronicle, or, most relevant here, a person who had, or wanted, or had had some previously mentioned newspaper (on any of the interpretations mentioned). Barbara might,

exploiting such principles, have chosen to refer to Jeff as the Levi jacket. Even the referring possibilities of proper names can be extended according to Nunberg functions; the phrase the San Francisco Chronicle could be used in exactly the same ways I have said the newspaper can.

Knowledge about communicating would also include principles for using knowledge of the world and a model of one's interlocutor to map between propositions or literal meanings and plausible intended conveyed meanings. These also involve implicatures derived from the Maxims of Conversation and knowledge of what is presupposed in an expression and how to express presuppositions, as well as knowledge of reasonable purposes and conditions for performing various illocutionary acts--the so-called preparatory and sincerity conditions. Knowledge about communicating also includes whatever it takes to be able to infer the illocutionary force of an utterance, e.g., to infer whether I'll be at your thesis defense is meant as a warning, a threat, a promise, or merely a prediction. It also includes the use of knowledge of implicature and reasonable and sincere communicative behavior necessary for the exploitation of indirectness, e.g., in inferring what might have been intended by an utterance of It's cold in here or conversely, in choosing a way to convey a particular fact, or desire, or sense of displeasure or gratitude. An utterer of It's cold in here may merely want to be informative (perhaps she is working on repairs in a refrigeration plant). Or perhaps she believes that it is obvious that it is cold, and wants to be warmer. Or maybe she has no expectation that the addressee could affect the temperature, but merely wants to make it clear that she is unhappy about it, or on the other hand, surprised and pleased.

Knowledge of the use of language is prototypically knowledge of unsystematic though possibly motivated conventions about language (cf. Morgan, 1978a)--for example, syntactico-lexical conditions of the sort that specify which of several grammatical ways of expressing a certain proposition or class of propositions are conventional when the language community does not recognize all as idiomatic, in the sense of conforming to the custom of the speakers. For instance, it is idiomatic in English to say I'm hungry, but not I have hunger (cf. I have gas, I have pain) or Hunger is to/for/in me (cf. This letter is to/for me, The fear of God is in me). Knowledge about the use of English tells us that I am hungry is the conventional way English speakers describe experiencing hunger.[14]

Knowledge about the use of language also includes knowledge of conventions for the use of certain linguistic forms on certain occasions (Morgan, 1978a). Sometimes, or in some people's competence, an occasion-purpose-means chain is provided, as in (10a) and (10b). Other times, as in (10c), the connection between occasion and utterance is unmediated.

(10a) When someone sneezes, chase the Devil away by invoking the blessing of God (by saying God bless you [or any of a number of other enumerated expressions]).

(10b) When someone sneezes, invoke the blessing of God by saying God bless you [or any . . .].

(10c) When someone sneezes, say God bless you [or any . . .].

The convention of beginning a story with Once upon a time or There was once a, or ending a prayer with amen are conventions of this sort. The

principles for the use of rhetorical questions like Who can understand Chomsky?, and sarcasm and irony generally, to the extent that they are systematic and realizable by nonlinguistic means (such as gesture), are probably knowledge about communicating rather than knowledge about the use of language. But proverbs are language-specific as well as culture-specific because they are used to communicate relatively specific propositions (Green, 1975). They involve an extreme kind of convention that maps directly from a communicative goal (an intended meaning) to a sentence, bypassing lower-level encoding tasks, like choosing what expressions to use for the individuals and properties to be referred to, and what grammatical constructions to use. But proverbs require for interpretation the same kind of inferencing as the interpretation of metaphor. Clearly the use of conventions like these is a function of knowledge of culture, not knowledge of language.

One might object to making a distinction between grammar proper (conventions "of language" in the terminology of Morgan, 1978a) and conventions about the use of language, on the grounds that it is not logically necessary: No principle prevents one from claiming that all "grammatical" principles (e.g., phrase structure rules, verb agreement rules) are really simply arbitrary conventions about the use of language. In such a scheme, a sentence like John am sick would be grammatical, but conventions about use would ensure its never being sincerely uttered by a rational speaker fluent in English. This is equivalent to saying that there is no grammar, only cultural conventions about language use. This strikes

me as an absurd position, since generality is gained only at the cost of losing the distinction between unmotivated and absolute bizarreness ("ungrammaticality") and explainable and conditional, situation-dependent bizarreness. Moreover, empirical study of language disorders supports the position that the distinction between grammatical well-formedness and (pragmatic) conventionality of usage is a valid and psychologically real one. Van Lancker and Canter (Note 5) summarize evidence from the clinical and experimental aphasiological literature which suggests that at least conventions about particular linguistic expressions (as opposed to classes of expressions, like the rhetorical question strategies), what Hughlings Jackson (1878) called "automatic speech," "are represented by a different cerebral organization and are processed differently, than are novel propositional expressions" (Van Lancker & Carter, Note 5, p. 1).

Knowledge of dialect and register restrictions might also be conceived of as part of knowledge about the use of language; e.g., the knowledge that think belongs to a different register from figure, reckon, and guess, that police is in a different register from fuzz, that insane, crazy, nuts, and daft all belong to different registers. At any rate, it seems reasonable to claim that knowledge of register, while specifically linguistic, is not part of knowledge of grammar. A sentence with items from conflicting registers, like (11),

(11) I reckon that all his male siblings were incarcerated then,

is not ungrammatical, but we could fairly conclude that someone who uttered (11) had not completely learned how speakers of English speak it (i.e., use their grammar).

Knowledge about the use of language also includes knowledge of the effects, to the extent that these are language-specific, of relative sequential position (e.g., grossly oversimplifying, thematic and rhematic positions), and of the pragmatic conditions on the use of particular non-idiomatic syntactic constructions (Raising, Passive, Negative-Raising, There-insertion, Extraposition, Inversion, probably the whole kit and kaboodle). But it is knowledge about communicating that determines the principles of organization of various kinds of discourse (so-called "text structure") and the principles that differentiate among ordinary expository prose, conversation, narrative, newswriting (Green, 1979), etc. Among these are strategies for appropriately increasing the comprehensibility of various kinds of discourse, and literary conventions particular to each (absence of self-reference in scholarly prose, the technique of style indirect libre [Banfield, 1973], etc.). This means, ultimately, that knowledge about communicating includes the principles and techniques that make up the art of writing and speaking well, and even those techniques and practices that contribute to personal conversational style (cf. Tannen, 1979).

Conclusions

I would like to conclude by expanding on a few of the implications of the view of linguistic knowledge that I have sketched here. First of all, let me make it clear that by distinguishing between knowledge of language and knowledge about language, (and calling the former "grammatical competence" and the latter "pragmatic competence"[15]), I am not saying that the former is the domain of linguistics and the latter the domain of

something distinct from linguistics. In the first place, excluding from the domain of inquiry of linguistics the investigation of linguistic pragmatics, or even pragmatics generally, would be entirely artificial, an academic division rather than a logical one. In the second place, it is not a priori given whether a particular linguistic fact is a fact of language or a fact about the use of language. Practicing linguists must know the principles of pragmatics well enough to be able to determine whether particular facts or kinds of facts require a grammatical explanation or a pragmatic one. Third, if the view presented here of what is involved in communication is even roughly correct, then what is misleadingly called "linguistic pragmatics," the principles for utilizing language to achieve purposes, is but a subcase of a general pragmatics whose object is to elucidate how plans to carry out intended purposes are formulated and executed. Linguists who have cultivated a sensitivity to use-conditions seem as well suited as anyone else for the task of specifying the principles for utilizing language to achieve goals. But let me not be construed as trying to colonize even so-called linguistic pragmatics for the exclusive inquiries of linguists.

I began this paper by asserting that knowledge of language had a rather small role, all things considered, in communication. I hope to have demonstrated by example that that a priori unlikely assertion is nonetheless plausible.

Finally, it may be that the description of what is required to use language to communicate appears obvious or trivial, now that it has been made so explicit. Even so, it has a number of non-obvious advantages. For

one thing, (though I have not demonstrated it here), it makes it impossible to claim that such notions as "topic," "comment," "coherence," "relevance," and even "referring expression" and "speech act" are notions that refer to relations among, and properties of, sentences or other linguistic expressions. They are notions that refer to relations among or properties of acts. Whether something is a topic or comment depends on inferences about speakers' plans and their relationships to acts (and/or vice versa)--i.e., what the speaker is trying to accomplish in the utterance, not what the sentences mean. To say that a text is coherent, or that some information is relevant to some other information is to say that the linguistic expression of the two sets of information can be interpreted as having been intended to convey information in accordance with an inferred plan for achieving an inferred goal. None of this is in the linguistic structures, or the rules of the syntax of the language, and potential theories of "text-linguistics" and "discourse structure," not to mention linguistics and psycholinguistics, are barking up the wrong tree if they persist in looking there for it. To say that some expression is a referring expression is to say that someone could utter that expression with the intent and reasonable expectation that the addressee would interpret it as referring to a certain individual or class of individuals. To say that a certain linguistic structure, e.g., a sentence, is a speech act is simply a category error. Uttering a sentence is a speech act, and there is a world of difference.

Volumes have been written on pseudo-issues which have arisen because these distinctions among kinds of linguistic knowledge were not made.[16] It is time to strive for an account of both language structure and language use which takes proper account of the goals and plans of language users, while maintaining the distinction between knowledge of language and other kinds of knowledge, including knowledge about communicating and knowledge about the use of language.

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Footnotes

[1]For an example of empirical work on this initial selection problem, cf. Chafe (1979).

[2]It would surely sound fatuous for me to say that cognitive behavior is rooted in an innate drive to understand motives; nonetheless it seems to me that the common tendency to respond to a question like "Is he in there?" when one is alone in a room with "Who?" rather than "No" must stem from exactly such a drive.

[3]As supposed by, e.g., Halliday and Hasan (1976) and van Dijk (1977).

[4]I was able to interview the child about her story. When asked why she thought it was better to say, "He said, ´In my legs´," than just "´In my legs´," she answered, "So they don´t think Dorothy said ´In my legs´ and not the Tin Woodman." I also asked her why she changed to a tin woodman to to something she thought was a tree. She explained, with perhaps a little impatience in her voice, "She thought the Tin Woodman was a tree." "Why," I persisted, "didn´t you want to say she came to a Tin Woodman?" Quite disgusted, she replied, "Didn´t you see the show before? Gosh!" Clearly, from her point of view, I ought to have known from prior experience with the story that it was important that Dorothy was at first deceived by the appearance of the Tin Woodman.

[5]Cf. Nunberg (1978) for interesting discussion of the knowledge of kinds.

[6]Clearly, however, provision must be made for cross-cutting categorization. Running is a kind of exercise, a kind of sport, and a kind of locomotion. A particular species of bird may be a shore bird, a sexually dimorphic bird, and a migratory bird. In both cases the categories are neither proper subsets of each other, nor mutually exclusive of each other.

[7]For support of the view that names are "rigid designators" for individuals and natural kinds, arbitrarily given, and maintained by convention (rather than as a consequence of linguistic, semantic, or psychological analysis), cf. Kripke (1972) and Schwartz (1977). Supporters of the view that referring expressions denote by rigid designation seem not to have noticed that a similar case can be made for many predicating expressions as well. The argument for this is beyond the scope of this paper, but I hope to take it up in the future.

[8]My remarks here are based on personal observations. From conversations with experts in language acquisition, I gather that this has been frequently noticed, but has not been much remarked upon in the literature. (However, cf. de Villiers and de Villiers, 1979, pp. 37-39, for some relevant comments in this regard.)

An incident that occurred shortly after I wrote this is perhaps relevant here. I happened to say something about delusions in the presence of two young children. The 27-month old asked, "What's delusions is?" The other child, not quite five years old, asked, "What's delusions mean?" (Unfortunately, I made the mistake of remarking on this difference in their presence, and the younger child began almost immediately to ask the meaning

of practically every other word uttered in his presence, e.g., "What's Newsweek mean?" "What's cover-up mean?" "What's Robin [his sister's name] mean?")

[9]Hee and he are phonologically identical, but only the non-pronominal form Hee is possible. That is, (i) is impossible, and I claim, ungrammatical, whether he is anaphoric or deictic.

i. *Out of the room ran he.

[10]Perhaps my offhand dismissal of strict subcategorization rules deserves some discussion. There does not seem to me to be any qualitative difference between on the one hand, the bizarreness of John elapsed, which is an absurd thing to say unless John is understood to be the name of a period of time (like March), and whose absurdity has been described as a function of the violation of selectional restrictions, and on the other hand, the bizarreness of Six hours elapsed John, which is an absurd thing to say because elapsing is not the kind of thing that can be done to an individual. This bizarreness has been described as a function of the violation of grammatical rules (strict subcategorization rules), despite the fact that the bizarreness is attributable to mistaken notions about what elapsing is. Neither sentence is any less grammatical than Colorless green ideas sleep furiously, the prototypical example of a grammatical but nonsensical sentence (i.e., appropriately generated linguistic form).

[11]E.g., cutting meat, cutting paper, cutting grass, cutting heroin, cutting salaries, cutting personnel, cutting oneself, etc. Keenan (Note 4) provides more examples.

[12]Apologies to P. G. Wodehouse. Cf. Hall (1973) for discussion.

[13]I use the phrase "principles for the use of the definite and indefinite articles" to refer to those pragmatically motivated principles which are essentially the same for all languages having a definite-indefinite contrast. The only strictly language-specific knowledge one needs for the appropriate use of the articles is their language-specific instantiation ("the definite article in English is _the_") and whatever rules are necessary to govern idiosyncratic and pragmatically unpredictable usages (e.g., the fact that in American English one says "$1.53 a pound" and not "$1.53 the pound"). These rules are, strictly speaking, knowledge about language, the instantiation, knowledge of language.

[14]_I am experiencing hunger_ is perhaps possible, though pedantic. The others are simply un-English, though not ungrammatical. This is all knowledge that the competent speaker has mastered, but it is knowledge about the _use_ of language, not knowledge of grammar.

[15]Cf. Chomsky (1980) for a similar distinction.

[16]Cf. Morgan and Sellner (in press) for discussion.

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